

ANIMAL KEEPERS' FORUM

The Journal of the
American Association of Zoo Keepers, Inc.

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TABLE OF CONTENTS

About the Cover/Information for Contributors.....	2
From the President	3-4
Coming Events.....	5
New Members.....	7
Call for Papers.....	8
AAZK National Conference Recap	10
AAZK Board of Directors Call for Nominations	11
International Congress of Zoo Keepers: Singapore 2012	12
<i>The Influence Habitat Type and Environmental Enrichments have on the Stereotypic Behaviors of North American River Otters</i>	13-21
Trees for You and Me.....	22
Enrichment Options: <i>Flying Fox Artists at Work</i>	23-25
Lion Fun Days; Conservation Connects Mozambique to Texas.....	26-28
My AAZK: <i>A Tale of How This Zoo Keeper Attended an AAZK/AZA Class...FOR FREE!</i>	29-31
Training Tales: <i>Using Training as a Distraction to Ensure a Low-Stress Knockdown On a Sloth Bear</i>	32-35
<i>Animal Keepers' Forum 2012 Index</i>	36-44



MISSION STATEMENT

(Revised April, 2009)

American Association of Zoo Keepers, Inc.

The American Association of Zoo Keepers, Inc. exists to advance excellence in the animal keeping profession, foster effective communication beneficial to animal care, support deserving conservation projects, and promote the preservation of our natural resources and animal life.

ABOUT THE COVER

Our oceans are facing many issues such as pollution and over-fishing. When a child makes a connection with wildlife it makes a lasting impression. Hopefully the bond made by that connection will inspire them to preserve and protect the ocean. By allowing people to get up close to marine animals and educating them about the problems these animals face, we may help conserve them for generations to come. This month's photo was taken by Teresa Micheletti. The photo was a First Place Winner in the photo contest used to support the very successful 2011 AAZK Conference in San Diego.

Orcas (*Orcinus orca*) are the largest of the dolphins and one of the world's most powerful predators. They feast on marine mammals such as seals, sea lions, and even whales, employing teeth that can be four inches (ten centimeters) long. They also eat fish, squid, and seabirds. In 2008, the IUCN changed its assessment of the orca's conservation status from conservation dependent to data deficient, recognizing that one or more types of orcas may actually be separate, endangered species. Depletion of prey species, pollution, large-scale oil spills, and habitat disturbance caused by noise and conflicts with boats are currently the most significant worldwide threats. Sources: en.wikipedia.org/wiki/Orca and animals.nationalgeographic.com/animals/mammals/killer-whale/.

Articles sent to *Animal Keepers' Forum* will be reviewed by the editorial staff for publication. Articles of a research or technical nature will be submitted to one or more of the zoo professionals who serve as referees for *AKF*. No commitment is made to the author, but an effort will be made to publish articles as soon as possible. Lengthy articles may be separated into monthly installments at the discretion of the Editor. The Editor reserves the right to edit material without consultation unless approval is requested in writing by the author. Materials submitted will not be returned unless accompanied by a stamped, self-addressed, appropriately-sized envelope. Telephone, fax or e-mail contributions of late-breaking news or last-minute insertions are accepted as space allows. **Phone (330) 483-1104; FAX (330) 483-1444; e-mail is shane.good@aazk.org.** If you have questions about submission guidelines, please contact the Editor. Submission guidelines are also found at: aazk.org/akf-submission-guidelines/.

Deadline for each regular issue is the 3rd of the preceding month.

Dedicated issues may have separate deadline dates and will be noted by the Editor.

Articles printed do not necessarily reflect the opinions of the *AKF* staff or the American Association of Zoo Keepers, Inc. Publication does not indicate endorsement by the Association.

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FROM THE PRESIDENT

I am addicted to TED.com®. TED is a nonprofit organization devoted to ideas worth spreading. In fact, their mission simply states: Spreading ideas. They believe in the power of ideas to change attitudes, ideas and ultimately, the world. Ideas from pioneering and inspirational thinkers are shared through conference talks and globally through web broadcasts. These talks feed my addiction and fill me with inspirational stories of innovation and inspire me to think outside the box. Those of you who receive the Chapter leadership newsletter have been introduced to a number of great TED talks on leadership.



One of my favorite TED talks, given by Benjamin Zander, Conductor of the Boston Philharmonic Orchestra contained the following story that I would like to share with you:

“Probably a lot of you know the story of the two salesmen who went down to Africa in the 1900s. They were sent down to find if there was any opportunity for selling shoes, and they wrote telegrams back to Manchester. And one of them wrote, “Situation hopeless. Stop. They don’t wear shoes.” And the other one wrote, “Glorious opportunity. They don’t have any shoes yet.”

I love this story because it shows how two individuals, given the same mission, can have two completely different outlooks on the task at hand. The first salesman examines the current situation and sees the present as his end point. The second salesman sees the current situation as his starting point and recognizes a bigger picture: opportunity. While the first was stonewalled by his own perception, the other imagined greatness. One can even read the enthusiasm and engagement in his telegram back to Manchester. Although the story stops there, one can only imagine that the second salesman continued with great success.

I love a good dichotomy and can’t help but ask the question: situation hopeless or glorious opportunity? While I don’t tout a Pollyanna perspective of the world, I do like to remind myself that every situation presents itself with opportunities. And as good timing would have it, you have an opportunity to make positive changes in our Association.

Nominations are now being accepted for the 2013 election for the National AAZK Board of Directors. As a member of the Board of Directors, you will be presented with opportunities to effect positive changes in both this Association and our profession. Working at the Board level provides opportunities to develop and sharpen your leadership skills as well as utilize your problem-solving and communication skills through project management and team building. Serving on the Board of Directors will give you the opportunity to help manage the success, service and productivity of AAZK. In essence, you will have an opportunity to make a profound difference in our Association, our profession and animal care. The nomination forms and criteria for nomination can be found in the Members’ Only section of aazk.org. Because the 2013 election will be done electronically, you will need to go to aazk.org in order to vote. Details for the nomination and election process can be found in this issue of the *AKF*.

In addition to a call for service on the Board of Directors, I encourage you, to consider other levels

of service within our organization. Our committees utilize the strengths of highly motivated and dedicated people and are an important facet of this organization. Service on the Chapter level enables you to grow as a leader and project manager and develop great teamwork skills. Chapters are the backbone of this organization; leadership on the Chapter level helps this Association grow.

If you are ready to seize a great opportunity and make incredible things happen with AAZK, I encourage you to run for the Board of Directors. If not, I encourage you to still be like that second salesman who saw opportunity where another saw none.

As always, I welcome your thoughts and input. E-mail me at bob.cisneros@aazk.org ; I would love to hear from you.

Bob Cisneros

"Some men see things as they are and say why - I dream things that never were and say why not."
-- George **Bernard Shaw**

Zander, Benjamin. "The transformative power of classical music." TED: Ideas Worth Spreading. June 2008. http://www.ted.com/talks/lang/en/benjamin_zander_on_music_and_passion.html

Lewa Loses Four Rhinos to Poachers



As this issue of the *AKF* went to press, the Lewa Wildlife Conservancy suffered the demoralizing loss of four rhinos to poachers. Two male black rhinos and two female black rhinos were slaughtered, bringing the population of rhino on Lewa back down to 71 individuals. In a country where the population is slightly above 600 animals, these incidents are a devastating blow to conservation efforts and show the enormous pressure that these animals are under. Lewa has now lost 10 rhinos to poaching in the last three years. *Source: Lewa Wildlife Conservancy*

In related news, Kenyan Wildlife Service officials say that the country's elephant, zebra, and rhino populations are dropping sharply throughout the country over the last four years due to poaching, demand for ivory, drought, and climate change. *Source: earthweek.com*

These incidents serve as a constant reminder of the harsh reality and rapidly escalating threat faced by rhinos and other wildlife. Bowling for Rhinos is as important as ever as we try to help our Conservation Partners like Lewa Wildlife Conservancy and International Rhino Foundation try to save these amazing creatures. Despite the fact that 2012 was a record year for BFR, we cannot rest on our accomplishment. It is critical that we continue to strive towards making 2013 and every year our best year ever. Start planning your 2013 BFR event today!

COMING EVENTS

Post Your Upcoming Events here — e-mail shane.good@aazk.org

February 27 - March 2, 2013

**21st Annual Conference of the
International Association of Avian
Trainers and Educators**

Hosted by Tampa's Lowry Park Zoo, Tampa,
FL. For more information go to: [iaate.org/
iaate-annual-conference/2013-conference](http://iaate.org/iaate-annual-conference/2013-conference)

April 14-19, 2013

ABMA Annual Conference

Toronto, Canada

The ABMA is heading north, eh! Visit Canada's cultural, entertainment and financial capital while experiencing the country's largest zoo! Don't miss a keynote address by Ian Stirling of Polar Bears International, an action-packed full day site visit at the Toronto Zoo and fun events including a very Canadian evening at the Hockey Hall of Fame! Stay at the Delta Chelsea Hotel, located in the heart of the city, for only \$119 a night (that's Canadian dollars, of course!). So grab your toque and your passport and join us for a truly international conference! For more information, visit theabma.org.

April/May 2013

Chimpanzee Meeting and

Husbandry Workshop

The Chimpanzee SSP and the Houston Zoo are hosting the next Chimpanzee Husbandry Workshop to take place April 30 – May 2, 2013. The Chimpanzee SSP meeting will precede the workshop on April 29, 2013. Please visit <https://houstonzoo.doubleknot.com/event/chimp-husbandry-workshop-registration/1250219> for more information.

May 5-9, 2013

Eighth Biannual Rhino Keepers' Workshop

Hosted by San Diego Zoo Global. For Call for Papers and more information contact laubery@sandiegozoo.org

May 20-23, 2013

World Crocodile Conference

"Living with Crocodilians" 22nd Working Meeting of the IUCN — SSC, Crocodile Specialist Group. For more information and registration, go to: csgsrilanka.com/

July 8-12, 2013

**Zoos and Aquariums Committing
to Conservation (ZACC)**

Hosted by Blank Park Zoo, Des Moines, Iowa. The conference will bring together colleagues from the field and zoos in an informal setting to network, share ideas and support one another in our shared commitment to conservation. Registration is available at [blankparkzoo.com/
index.cfm?nodeID=48429&audienceID=1](http://blankparkzoo.com/index.cfm?nodeID=48429&audienceID=1). Contact Jessie Lowry with questions at jrlowry@blankparkzoo.org.

August 7-10, 2013

**11th Annual Symposium on the Conservation
and Biology of Tortoises and Freshwater Turtles**
Co-hosted by the Turtle Survival Alliance and the IUCN-TFTSG in St. Louis, Missouri. Please visit [turtlesurvival.org/get-involved/
conference](http://turtlesurvival.org/get-involved/conference) for more information, or contact Heather Lowe at Hlowe@turtlesurvival.org.

September 22-26, 2013

AAZK NATIONAL CONFERENCE

**Hosted by North Carolina Zoo and North
Carolina AAZK Chapter, Asheboro, NC**

For more information go to:
ncaazk.com/2013nationalconference.htm

October 13-17, 2013

WAZA Annual Conference

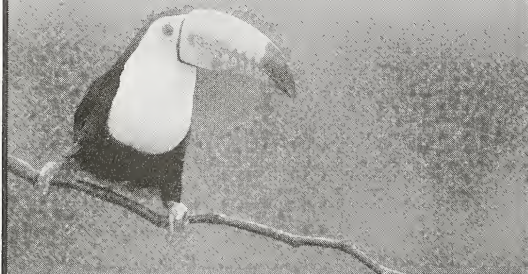
Hosted by Disney's Animal Kingdom. For more information go to: waza.org

October 15-18, 2013

**ICEE — International Conference on
Environmental Enrichment**

Hosted by the National Zoological Gardens of South Africa at the Kwalata Game Ranch, South Africa. For more information, go to nzg.ac.za/icee2013

National Conferences



AZA

2013 - Kansas City, MO - September 7-12
2014 - Orlando, FL - September 12-17
2015 - Salt Lake City, UT - September 17-21

aza.org

AAZK

2013 - Asheville, NC - September 22-26
2014 - Orlando, FL - September 8-12
2015 - St. Louis, MO - Dates TBD

aazk.org

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— AAZK ANNOUNCES NEW MEMBERS —

Mario Lawrence, Catoctin Wildlife Preserve and Zoo, Thurmont (MD)
Katherine Charles, Mill Mountain Zoo, Roanoke (VA)
Angie Brown, Ft. Wayne Children's Zoo, Ft. Wayne (IN)
Jennifer Duncan, Mesker Park Zoo, Evansville (IN)
Michelle Smith, Mini S Exotics, Mineola (TX)
Serenity Hyland, San Antonio Zoo, San Antonio (TX)
Laura Shepler, Hillcrest Park Zoo, Clovis (NM)
Susan Burchardt, Woodland Park Zoo, Seattle (WA)
Jennifer Martin, Toronto Zoo, Scarborough, Ontario (Canada)

NEW COMMERCIAL MEMBER

Alfred Budweth, Zukudla, Inc., Nobleton, Ontario (Canada)

RENEWING COMMERCIAL MEMBER

Shane Bagnall, Zoo Med Laboratories, Inc., San Luis Obispo (CA)

RENEWING CONTRIBUTING MEMBER

Mark Hofling, Tarrytown (NY)

RENEWING INSTITUTIONS

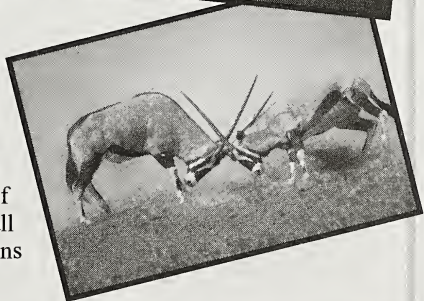
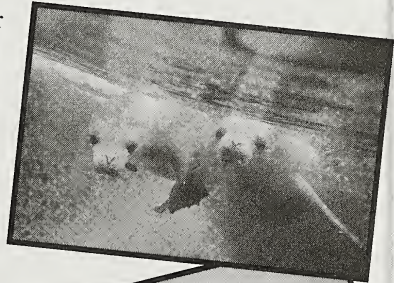
Rosamond Gifford Zoo at Burnet Park, Syracuse (NY)
Wildlife Wonders-Zoo To You, Cleveland (GA)
El Paso Zoo, El Paso (TX)
Pikes Peak Community College, Zoo Keeping Tech. Prog., Colorado Springs (CO)
Gorilla Foundation Library, Redwood City (CA)
Chimps, Inc., Bend (OR)

ATTENTION ALL PHOTOGRAPHERS!

AKF Needs Your Photos

Attention all photographers, the *AKF* needs your photos as potential cover photos and special feature photos throughout the issue. All photos need to be high resolution, 1875 x 2250 pixels or greater, 300 dpi or greater in resolution, 1MB or greater. All photographers will need to submit a photo release form that can be found at aazk.org/animal-keepers-forum/aazk-photo-model-release-form/. Photos that clearly depict facility logos and behind-the-scenes shots will need permission of the facility to be used.

Subjects for the photos should revolve around animal husbandry, conservation, education/interpretation, professional development, significant achievements in the industry (births, exhibits, staff, etc.), and can also include some of the more humorous or unique situations that we all come across each day in our occupations. Captions for each photo should also be submitted.



CALL FOR PAPERS

For Dedicated Issue of *Animal Keepers' Forum* – Multi-species Bird/Ungulate Habitats

The challenges we face in building sustainable zoo populations while creating dynamic habitats require innovative solutions. Ungulate and bird curators, managers and keepers have much to gain by collaborating together to explore ways to maximize our limited exhibit space. Increased space for our program species, more dynamic and more naturalistic exhibits to benefit our animals and our visitors, and diversification of keeper skills are just some of the benefits of multi-species bird/ungulate habitats.

We encourage those interested to submit manuscripts for consideration to be included in this dedicated issue. Possible topics could include, but are not limited to:

Reproduction/neonatal care

Veterinary care

Pest control

Staff communication

Birds 101 for Hoofstock Keepers/Managers

Training/enrichment

Feeding/nutrition

Exhibit design

Introductions of new animals

Benefits of Hoofstock/Bird multi-taxa habitats

Hoofstock 101 for Bird Keepers/Managers

Species selection

Papers should be submitted electronically, in MS Word only, to shane.good@aazk.org. Please use Times New Roman font (10 pt. text body). Please put "Bird Ungulate Issue" in the subject line of your e-mail. Papers should be no more than 10 pages in length. Any charts and/or graphs should be submitted in their native program (i.e. Microsoft Excel, Word, etc.). Photos submitted electronically should be high-resolution (minimum 300 dpi, 1 MB, 900 x 600 pixels) jpg or tiff files. Photos, charts, and graphs should be submitted as separate files and not be embedded in the manuscript. Be sure to include proper photo credit and a suggested caption for each photo. Please reference the complete set of AKF submission guidelines at aazk.org/akf-submission-guidelines/.

Be sure to also include your complete contact information including name, address, e-mail and a daytime phone where you may be reached if we have questions concerning your submission. Also be sure to include your facility and your job title at that facility.

Deadline for submission of articles for this special issue is **February 1, 2013.**




Special Call for Papers: Dedicated Issue on Gorillas

All papers on gorilla husbandry and conservation welcome.

Deadline for submissions is February 1, 2013.

See above for submission guidelines.



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The 39th American Association of Zookeepers National Conference Recap and Professional Development Committee Update

One of the main visions of the American Association of Zoo Keepers is to foster professional development and personal connections that advance animal care, animal welfare, and conservation. Nowhere is that more on display than at the annual national conference for the Association. This year the Rosamond Gifford Zoo in Syracuse, New York played host for almost 200 delegates to travel from all over North America and the world to help play out that vision. Between September 23 and September 27th zookeeping professionals descended on the Salt City for a new type of learning and networking experience. If you have not been to a National Conference in several years, or if you have not attended one yet, then you are in for a surprise as the format has been changed to offer and inspire learning in several methods, from hands on interactive workshops to interactive paper sessions and training demonstrations in between.

This year we had 20 workshops that showcased subject matter experts that ranged from local experts at the Rosamond Gifford Zoo on topics ranging from Sloth Husbandry to Humboldt Penguin Breeding Management, to experts from within the Association on topics such as Emergency Preparedness Basics, Intro to Falconry, Team Building and Conflict Resolution, Keepers as Population Managers, and Maintaining a Successful AAZK Chapter. The membership was also well represented with numerous zoo keepers putting themselves out there and giving paper sessions on topics such as Giant Anteater Introductions, Attwater's Prairie Chicken Conservation, Integrating Research and Animal Care to Support Conservation, How to Increase Enrichment Opportunities through Reuse and Recycling, and Development of a Foundational Text for Zoo Keeping. Some of these paper sessions were interactive and extended in length to allow delegates to explore the topics more in depth.

No conference would be complete without Zoo Day and numerous networking opportunities. The Rosamond Gifford Chapter hosted a wonderful and relaxed Zoo Day, featuring numerous animal husbandry and training demonstrations along with several behind the scenes looks at their animal facilities. The Conference icebreaker took place at the Syracuse Museum of Science and Technology and gave everyone time to meet and get to know each other in some unique ways in a unique setting.

This was only the second year AAZK has run conferences in this format and we could not be more pleased on how smooth things went in Syracuse. It was very exciting to see this new format take shape. However, despite how AAZK changes and runs its National Conference, only a small percentage of the membership can actually attend on any given year. The future of AAZK lies not only in these conferences but in distance learning. AAZK in the coming years will be moving to unveil an online social and collaborative learning community that will be packed with online content and function in the form of webinars that will feature a variety of topics that get to the core and basics of what it means to be and work successfully as a professional zoo keeper.

I wanted to end this with a big thanks to numerous folks, supporters, and sponsors that make our vision, national conferences, and future so bright and exciting. So a special thanks to our national sponsors Mazuri, Disney's Animal Kingdom, Fauna Research International, and our local Syracuse sponsors Rosamond Gifford Zoo, Friends of the Rosamond Gifford Zoo, and Onondaga County Parks.

AAZK Board of Directors CALL FOR NOMINATIONS



The American Association of Zoo Keepers has opened its Call for Nominations for the 2013 Election for the Board of Directors. Serving on the AAZK Board of Directors presents a perfect opportunity to take on a leadership position in AAZK and within the zoo profession. It offers you the opportunity to have a voice in the contemporary issues of our industry. It allows you to hone your skills in leadership, project management, team building, and working with a diverse group of individuals who are dedicated to professional animal care and conservation. If this sounds like a great opportunity to you, then now is the time to run for the AAZK Board of Directors!

Nomination forms will be due at the AAZK Administrative Office by February 28, 2013.

The nomination forms, and the criteria for nomination can be found in the Members' Only section of aazk.org. The 2013 Election will be done electronically, so you need to go to aazk.org to vote. Additionally, your Professional Membership status must be current and you must be registered on the Members' Only section of aazk.org. Here are the key dates of the Election:

- February 28, 2013 – Nomination forms are due at the AAZK Administrative Office
- April 1, 2013 – Viewing of candidate profiles opens in the Members' Only section of aazk.org
- April 15, 2013 – June 1, 2013 is the official voting period
- Results of the 2013 Election will be announced after the verification of ballots, approximately June 10, 2013.

International Congress of Zookeepers



Singapore, 2012

In September of 2012, ICZ members from around the world convened for the fourth time for a highly successful international conference. Approximately 250 delegates from 32 countries met in Singapore for the Fourth International Congress on Zookeeping, the widely celebrated event for keepers worldwide which takes place every three years. This conference continued the previous successes of ICZ conferences in Holland, Australia, and Seattle.

Kindly hosted by the Wildlife Reserves Singapore Group, the conference was held at The Singapore Zoo and Night Safari, and the Jurong Bird Park. Following the opening night Icebreaker at the Penguin Coast area of Jurong Bird Park, delegates were kept busy for the next four days by 56 paper presentations, 10 workshops, and 43 posters! Most still found time to explore the zoo and the amazing aviaries of the Bird Park.

Attendees were warmly welcomed with a keynote address by Ms. Claire Chiang, Director of Wildlife Reserves Singapore. Subsequent keynote addresses came from Professor Leo Tan Wee Hin of the National University of Singapore and Steve Martin, President of Natural Encounters, Inc.

Many delegates also took advantage of the pre-conference and post-conference tours to see a variety of national parks and reserves in Indonesia and Malaysia. An opportunity to see wildlife in their native habitat and to learn about the conservation projects involving orangutans, rhinos, and many other species made for a once in a lifetime trip for these zoo keepers.

The newly elected officers of the ICZ for 2013-2015 are:

President: Rolf Veenhuizen, Safari Beekse Bergen, Holland
Vice President: Carsten Knott, Frankfurt Zoo, Germany
Treasurer: Liz Romer, Australasian Society of Zookeeping, Australia
Secretary: Carla Srb, Healesville Sanctuary, Australia



AAZK's representatives to the ICZ are:

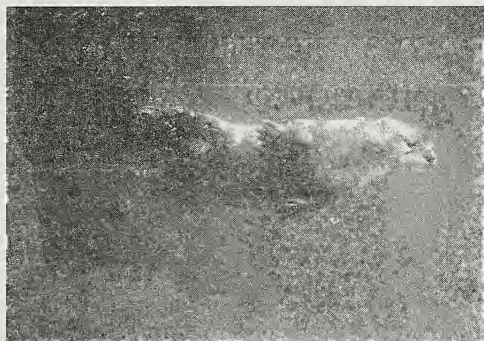
Norah Farnham, Woodland Park Zoo, Seattle, WA
Sara Wunder Steward, Busch Gardens, Tampa, FL

The Fifth International Congress on Zookeeping will take place in 2015 in Leipzig, Germany. Stay tuned as dates and details develop!

Remember, if you are an AAZK member, you are also an ICZ member! Check out our website: iczo.org

The Influence Habitat Type and Environmental Enrichments have on the Stereotypic Behaviors of North American River Otters

*Carolina Segarra, Animal Conservation & Research Intern
Ashley Yates, Animal Keeper III
Palm Beach Zoo
West Palm Beach, Florida*



(Left) Otter "Sully". Photo ©Alan Weiner



(Right) Author Carolina Segarra with "Sully".
Photo by Ashley Yates

Introduction/Background:

The North American river otter (*Lontra canadensis*) is an animal that can be found in numerous zoos and aquariums around North America and is a popular exhibit with guests. In the past, this species of otter was distributed from Canada to Mexico and though they once inhabited most of the major waterways in this region, they are now almost exclusively found in Canada, Alaska, California, and along the East coast. The drastic reduction in their numbers is due to the popular sport of hunting them for their fur back in the mid 1900's (AZA, 2009). Where found in the wild, they usually stay near a water source including freshwater and coastal marine habitats where food is abundant. This species of otter can survive in rivers, lakes, marshes, swamps, and even estuaries. These otters can also tolerate a variety of environments, including both cold and warm latitudes as well as high elevations which allow them to adapt to most captive settings (Dewey & Ellis, 2003). Usually solitary, males and females will socialize during mating season in late winter through early spring. If successful impregnation occurs, the mother will raise the pups in a den. Despite the fact that this species of otter is usually solitary, males have been found to form large groups of eight or more individuals in environments where resources are abundant (World Association of Zoos and Aquariums, n.d.). These large groups have been placed and managed successfully in zoos and aquariums and show the species' adaptability (AZA, 2009). This study will focus on two separated pairs of otters (1.3) at the Palm Beach Zoo and the effect certain environmental factors have on their interaction with enrichment items and impact on stereotypical behaviors. The otters were categorized as a mating pair (Sully and Rudder) and a female sibling pair (Thelma and Louise). Because otters are semi-aquatic, they vary the time they spend on land and in water and therefore this study will compare the same enrichment items in a mostly aquatic habitat versus a mostly terrestrial habitat to see how each area affects the use of each enrichment item. The goals of this study are to correlate specific factors that will help identify which type of enrichment is most effective and the areas they will be better used in to help decrease abnormal behaviors which could then lead to better welfare for these animals.

Materials and Methods: The materials used in this study were a time source (one-minute stop watch, cell-phone or wrist watch) and the observational sheet for recording data. The enrichment methods that were studied were provided by the keeper, Ashley Yates, who also had the decision of choosing how complex each enrichment would be. A schedule was developed so the otters would get an enrichment method they’ve previously received (labeled “old”) as the control, one day and then an enrichment method that they’d never received, (labeled “new”) the day following each study session for comparison. Each session was over a span of two weeks where the otters received the same old enrichment method in their respective habitat one day, the new enrichment method in that same habitat the next day, and then the following week be given the old enrichment in the opposite habitat and new enrichment in that same habitat the day after. Every two weeks the session was repeated with the next set of enrichments scheduled. During each of the study days, the behaviors were observed in the morning (8:00 AM - 11:30 AM), mid-day (11:31 AM – 1:30 PM) and afternoon (1:31 PM – 4:00 PM) for each pair of otters in their respective habitats. This study took eight weeks, during which a total of four enrichment setups were studied and each otter was observed a total of 720 times.

Figure 1.The enrichment schedule

Week	Session	Wet Habitat	Dry Habitat
1	1	Female Pair	Mating Pair
2	1	Mating Pair	Female Pair
3	2	Mating Pair	Female Pair
4	2	Female Pair	Mating Pair
5	3	Mating Pair	Female Pair
6	3	Female Pair	Mating Pair
7	4	Mating Pair	Female Pair
8	4	Female Pair	Mating Pair

Note: Week 3 was not altered due to a health condition in one of the otters

Figure 2. Enrichment type and description during each session.

Session	Enrichment Type / Category	Enrichment
1	Old - Cognitive & Nutritional	1 water jug each with dry dog food and half an egg inside
	New – Nutritional	1 clam each
2	Old – Physical	Areca Palm Fronds around enclosure
	New – Sensory	Llama wool tufts around enclosure
3	Old – Nutritional	2 eggs each
	New – Physical	Piles of ice around enclosure
4	Old – Sensory & Nutritional	Old Spice cologne and vegetables around enclosure
	New – Cognitive & Nutritional	1 Floating boomer ball with 2 connected puzzle feeders that dangle and 6 fish inside each puzzle feeder

Enrichment Categories (As defined by Palm Beach Zoo and AZA):

- Nutritional (i.e. novel food or food presented in a different way)
- Cognitive (i.e. puzzle feeders and other novel items)
- Sensory (i.e. scents and vocalizations)
- Physical (i.e. changing or adding props in enclosure)

Results

Because every otter displayed a different stereotypic behavior, with the exception of Thelma, all four were analyzed on an individual basis to see how the enrichments affected this behavior in the respective habitat. Some of the crucial questions that needed to be answered after the data was collected are as follows:

- 1.) What percentage of time do the otters spend on land or water in each style of habitat with enrichment?
- 2.) What percentage of time do the otters spend performing their stereotypical behavior in each style of habitat with enrichment?
- 3.) What percentage of time do the otters spend performing their stereotypical behaviors during each type of enrichment in general between both habitat styles?

Figure 3. For each type of enrichment, the percentage of behaviors distributed when all scans combined

	New Enrichment				Old Enrichment			
	Enrichment Directed Behaviors	Stereotypic Behavior	Natural Behaviors	Other Behaviors	Enrichment Directed Behaviors	Stereotypic Behavior	Natural Behaviors	Other Behaviors
Rudder	9%	1%	88%	2%	15%	1%	80%	4%
Sully	11%	8%	78%	3%	11%	4%	81%	4%
Louise	2%	23%	69%	6%	6%	19%	71%	4%
Thelma	16%	0%	81%	3%	6%	0%	79%	5%



North American River Otter. ©Shutterstock.com

Figure 4. What percentage of their time did they spend on land or water in each style of habitat despite scheduled enrichment?

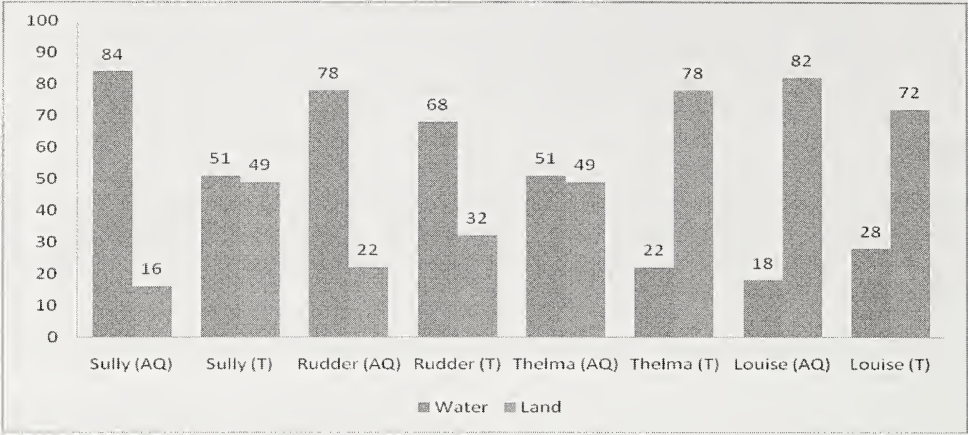


Figure 4 shows the percentage of time the otters spent on land or in water abbreviated by AQ, for Aquatic, and T for Terrestrial, during enrichment.

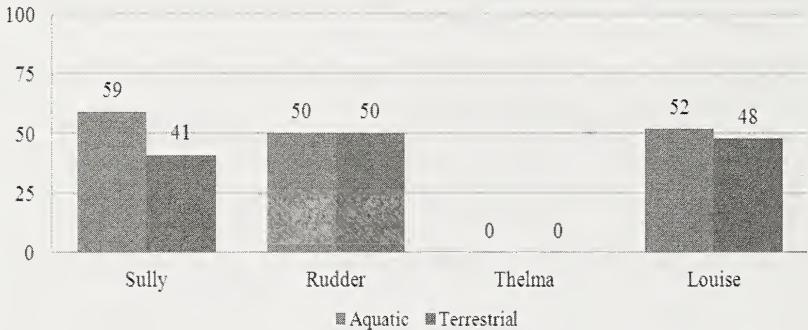


Figure 5. What percentage of their time did they spend performing their stereotypical behavior in each style of habitat?



Figure 6 shows the percentage of time the otters spend performing their stereotypical behaviors during each type of enrichment in general between both habitat styles.

Chi Square Statistics:

In the Chi Square statistic, when the computed χ^2 statistic does not exceed the critical value in the table for a 0.05 probability level, then we can accept the null hypothesis of equal distributions. When the critical value is exceeded we can accept the alternative hypothesis. In this case for all others, the critical value = 3.841

	Scans spent doing ST	Scans spent doing every behavior but ST	Totals
Aquatic Habitat	27	333	360
Terrestrial Habitat	19	341	360
Total	46	674	720

Chi Square Figure 1. Sully: (does habitat style affect him doing his stereotypical behavior):

Sully (does habitat style affect him doing his stereotypical behavior):

Chi square = $720[(27)(341) - (333)(19)]^2 / (360)(360)(674)(46) = 1.486$

Null hypothesis: habitat did not affect his stereotypical behavior

Alternative hypothesis: habitat did affect his stereotypical behavior

Since the χ^2 statistic (1.486) did not exceed the critical value for 0.05 probability level (3.841) the null hypothesis that the habitats had no effect on his stereotypic behavior can be accepted.

	Scans spent doing ST	Scans spent doing every behavior but ST	Totals
New Enrichment	30	330	360
Old Enrichment	16	344	360
Total	46	674	720

Chi Square Figure 2. Sully: (does enrichment type affect him doing his stereotypical behavior):

Sully (does enrichment type affect him doing his stereotypical behavior):

Chi square = $720[(30)(344) - (330)(16)]^2 / (360)(360)(674)(46) = 4.551$

Alternative hypothesis: type of enrichment affected his stereotypical behavior

Null hypothesis: type of enrichment did not affect his stereotypical behavior

Since the χ^2 statistic (4.551) exceeded the critical value for 0.05 probability level (3.841) the alternative hypothesis that the type of enrichment did have an effect on his stereotypic behavior can be accepted.

	Scans spent doing ST	Scans spent doing every behavior but ST	Totals
Aquatic Habitat	4	356	360
Terrestrial Habitat	4	356	360
Total	8	712	720

Chi Square Figure 3. Rudder: (does habitat style affect her doing her stereotypical behavior):

Rudder (does habitat style affect her doing her stereotypical behavior):

$$\text{Chi square} = 720[(4)(356) - (356)(4)]^2 / (360)(360)(712)(8) = 0$$

Alternative hypothesis: habitat affected her stereotypical behavior

Null hypothesis: habitat did not affect her stereotypical behavior

Since the χ^2 statistic (0) did not exceed the critical value for 0.05 probability level (3.841) we can accept the null hypothesis that the habitats had no effect on her stereotypic behavior.

	Scans spent doing ST	Scans spent doing every behavior but ST	Totals
New Enrichment	4	356	360
Old Enrichment	4	356	360
Total	8	712	720

Chi Square Figure 4. Rudder: (does enrichment type affect her doing her stereotypical behavior):

Rudder (does enrichment type affect her doing her stereotypical behavior):

$$\text{Chi square} = 720[(4)(356) - (356)(4)]^2 / (360)(360)(712)(8) = 0$$

Alternative hypothesis: type of enrichment affected her stereotypical behavior

Null hypothesis: type of enrichment did not affect her stereotypical behavior

Since the χ^2 statistic (0) did not exceed the critical value for 0.05 probability level (3.841) we can accept the null hypothesis that the type of enrichment had no effect on her stereotypic behavior.

	Scans spent doing ST	Scans spent doing every behavior but ST	Totals
Aquatic Habitat	77	283	360
Terrestrial Habitat	72	288	360
Total	149	571	720

Chi Square Figure 5. Louise: (does habitat style affect her doing her stereotypical behavior):

Louise (does habitat style affect her doing her stereotypical behavior):

$$\text{Chi square} = 720[(77)(288) - (283)(72)]^2 / (360)(360)(571)(149) = .211$$

Alternative hypothesis: habitat affected her stereotypical behavior

Null hypothesis: habitat did not affect her stereotypical behavior

Since the χ^2 statistic (.211) did not exceed the critical value for 0.05 probability level (3.841) we can accept the null hypothesis that the habitat style had no effect on her stereotypic behavior.

	Scans spent doing ST	Scans spent doing every behavior but ST	Totals
New Enrichment	81	279	360
Old Enrichment	68	292	360
Total	149	571	720

Chi Square Figure 6. Louise: (does enrichment type affect her doing her stereotypical behavior):

Louise (does enrichment type affect her doing her stereotypical behavior):

$$\text{Chi square} = 720[(81)(292) - (279)(68)]^2 / (360)(360)(571)(149) = 1.43$$

Alternative hypothesis: type of enrichment affected her stereotypical behavior

Null hypothesis: type of enrichment did not affect her stereotypical behavior

Since the χ^2 statistic (1.43) did not exceed the critical value for 0.05 probability level (3.841) we can accept the alternative hypothesis that the type of enrichment had no effect on her stereotypic behavior.

Discussion

When it came to understanding the behaviors these otters were displaying, why they were doing them and what influenced those behaviors, a lot of detailed natural history was used to answer these questions. One of the crucial parts to analyzing this data was understanding that each otter was scanned for 15 minutes, three times a day and twice a week for a total of eight weeks. A total of 720 minutes of data was collected for each otter. Observations were divided evenly between terrestrial and aquatic habitats, and new and old enrichments. Every individual was analyzed equally and even though every otter except Thelma had an individual stereotypic behavior, all of the information that was collected on all otters was used to help analyze whether the enrichments or habitat style decreased or increased any abnormal tendencies. As shown in the figures, Thelma was included as a control to show that her behavior was not influenced by the enrichment or not associated with the enrichment while possibly being stimulated by one of the other components that were analyzed. In general neither enrichments nor habitat style caused a change in her behavior seeing as she had no drastic modifications to her natural behaviors when any element was correlated during her observations.

Her sister Louise, as shown in the figures had the most recurring stereotypic behavior out of all the otters. This behavior consisted of a pseudo drinking act where she would pick an area on the edge of the water and appeared to be drinking but the belief of the observers was that no drinking was actually done. Of the 360 minutes that every otter was scanned for each type of enrichment, she spent 19% of that time during old enrichments doing her stereotypic behavior and 23% of that time during new enrichments doing her stereotypic behavior. When analyzing how the style of habitat affected

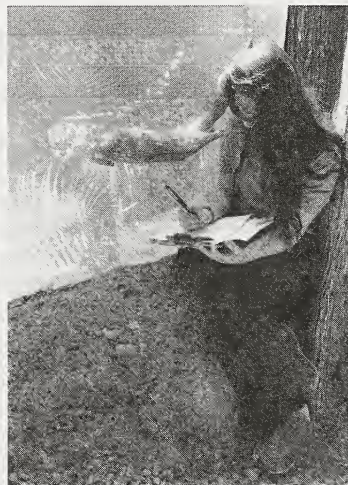
her behaviors, it did not show a difference in her reaction to the scheduled enrichments. She spent an average of 77% of her time on land in both exhibits and her stereotypic behavior was seen equally in both styles of habitat. Rather than seeing enrichment directed behaviors, she was mainly locomotive on land, observed those around her and performed her stereotypic behavior. One theory for Louise's behavior was that Thelma is more dominant over her, which could be causing her stress. At one point, Louise began showing physical health issues, (unrelated to our research), in which she began to over groom herself and remove much of her guard hairs leaving only the undercoat over the majority of her body. In some places this also caused hot spots so because of her medical issue the research was put on hold for two weeks and the girls were separated to deal with her issue. After separation, there was improvement on Louise's behavior and physical health. The time alone seemed to have a positive impact on Louise's stereotypic behavior by drastically decreasing it even after being placed back with Thelma.

As shown in the figures, Rudder, unlike Louise, spent the majority of her entire time in the water (an average of 73%), in both enclosures during either enrichment. She also had more enrichment directed behaviors in general in both habitats and with both new and old enrichments. She was most interactive with session one's old enrichment and session four's new enrichment, both man-made devices with part of their diet in it. There was no obvious habitat preference shown and therefore it can be concluded that from this data, she does well in both styles of habitat. Her stereotypical behavior out of the three otters, was the least concerning and least frequent. Out of the 720 minutes she was scanned, only eight minutes were recorded where she was performing her stereotypic behavior. This behavior consisted of randomly chewing on rocks that were outcropped on the edges of the pools. This behavior was seen in both the aquatic and terrestrial environments, during both new and old enrichments, and mainly in the mornings. Neither habitat nor enrichment increased, decreased or stimulated this behavior. Since it wasn't done as often as the other two that display abnormal behaviors, the authors believe she may have done this due to brief boredom, frustration or hunger.

Sully spent similar amounts of time doing the same behavior in either enclosure. When it came to his stereotypic behavior however (pulling the sheath around his penis while floating), he did it most frequently in the aquatic enclosure, during new enrichments, when fewer people were around and in the mornings when first shifted out. Because his stereotypical behavior consists of floating, it is understandable that it occurred more frequently in the enclosure that offered more options for him to



(Left) Otter "Thelma". Photo ©Alan Weiner



(Right) Co-Author Ashley Yates

float. He had a strong correlation with this behavior and the initial shift out of the back area. Unlike any of the other otters however, there was a difference seen while observing him when it came to performing this behavior during new enrichments versus old enrichments as he performed it almost twice as often during new enrichments. There was significant correlation between newer enrichments and the frequency of this stereotypic behavior that perhaps suggests that he did this behavior due to stress and confusion over the newer enrichment.

It can be concluded that the otters in general did well in both exhibit styles, despite the preference of Louise and Thelma spending more time on land than Sully and Rudder. With the exception of Thelma, the stereotypic behaviors of these otters had mostly no correlation with enrichment style other than Sully's increase in stereotypical behaviors during new enrichments. Sully was the only otter who substantially displayed more abnormal behaviors when introduced to foreign items or concepts. Overall, the actual style of habitat did not prove to have an effect on the enrichment success. Despite all the research proposed and collected on why these otters act the way they do, it was shown during the observations that each individual has a personality that greatly affects the way they react or behave in different situations. It was concluded that throughout this study, each otter declared their personalities in the way they interacted with the enrichments, and even how well they used their space. Rudder seemed to be the most active in her environment, Sully was selective though calm in his environment, Thelma came across as dominant and though not easily affected by outside forces, she was always alert of her surroundings and Louise was concluded to be the most sensitive of the four. From the data that was collected, these otters are now better understood and their husbandry and training can be tailored to be less stressful and more rewarding as a better idea of their reaction to certain situations is comprehended.

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Hope for
Polar Bears:
AAZK Trees
for You & Me
News & Updates



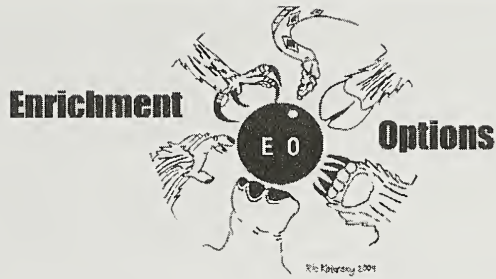
Trees for You & Me is back with a new planting strategy/outcome, but based upon the same friendly competition pitting your Chapter against other Chapters to raise the most money to help plant trees for the sake of polar bears. For more information, go to the aazk.org homepage and click on Trees for You & Me FAQ's, to learn about the new dates and new processes for The Trees for You and Me Chapter Challenge. The 2013 edition of Trees for You and Me begins this month so go to aazk.org today to learn how you can help.

The real winners are polar bears and their arctic habitat--please join us in making this the best fundraising drive ever for this key AAZK project.

Plant a tree. Help a polar bear. It's as simple as that!



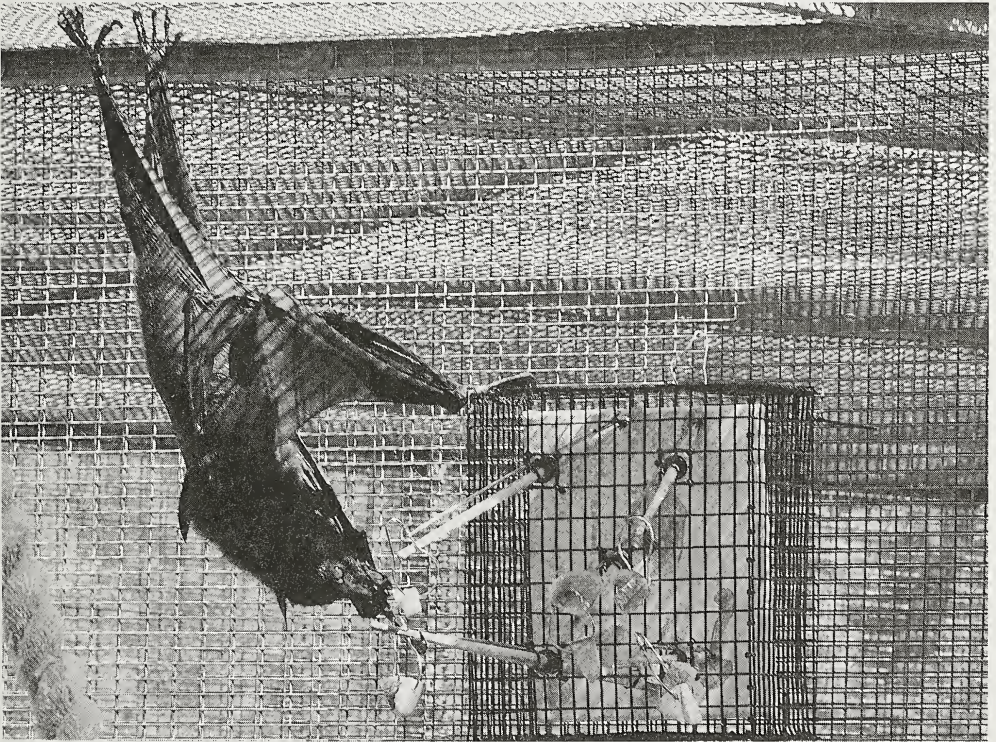
Plant a tree, help save polar bears. Go to aazk.org to learn more about Trees for You and Me.



Flying Fox Artists at Work

By
Jenna McMichael, Keeper 1
Lubee Bat Conservancy
Gainesville, Florida

Seed dispersers, pollinators, artists? For many, these are not the first words that come to mind when people think about fruit bats. These misunderstood animals are often associated with myths and negative connotations; education is one of the key factors utilized by zoo keepers to change these perceptions. In order for the public to show interest and want to save an animal from extinction, they need to be able to relate to that animal on some level. As an educator, that job can be challenging when



A Flying Fox Artist at Work. *Photo by Jenna McMichael*



Creative bats as conservation ambassadors.

the animal already has a negative reputation. One way to address the often misaligned reputation of bats is to find a way to showcase their creative side - painting!

Designing a way for the bats to paint was a challenge for many reasons. One of the first hurdles was to build an enrichment apparatus that would be light enough to hang from the ceiling and durable enough to hold up to the bats inquisitive nature. The next priority was to perfect this in a way that would make it functional enough that the bats could manipulate it. Fruit bats have an amazing amount of dexterity especially for being limited to the functionality of a thumb. The final challenge was to design the apparatus as naturalistic as possible, meaning the bats would be able to operate the enrichment with ease.

Designing this enrichment involved using materials that the bats were familiar with in hopes of reducing the introduction process. These materials include metal fencing the collection is housed in, zip ties which are used to hold the enrichment together, shower curtain rings, and metal skewers (kabobs). The shower curtain rings and skewers are used on a daily basis to hang food enrichment around the enclosures, the zip ties are used to hang browse. Reusing materials was not only important for the introduction process but for the overall safety of the animals as well. The only materials that were “new” to the bats were the canvas, brushes and paint. Of these materials, the only new objects that could come into direct contact with the animals are the brush handles. The canvas and non-toxic paint are safely enclosed in the vinyl-coated wire housing used to protect the canvas and hang in a way so the bats can access it easily.

The overall functionality of the enrichment was the most grueling challenge of making this apparatus a reality. The goal was to devise this using a limited amount of gadgetry. It needed to be simple enough for a fruit bat to maneuver without being trained on how to do so. The housing for the canvas is the very same material used to house the animals themselves, so there was no doubt it would hold up to scrutiny. The bats do not have direct contact with the paint so half of the brushes are safely enclosed away from the bats. The skewers were attached to the brushes for both a counterweight and a way to attach fruit, which is used to encourage the animals to paint. Shower curtain rings were used to hang the enrichment and attach fruit to the skewers. The finished product functions like this: with a piece of fruit attached to the brushes, a bat approaches the enrichment and uses its thumbs and



Photo by Jenna McMichael

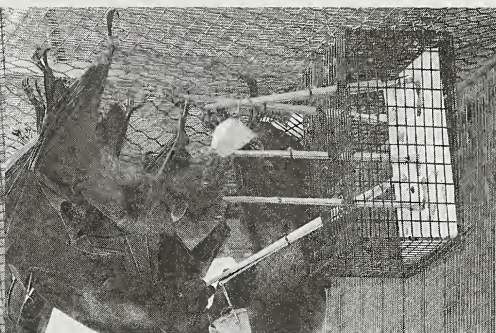
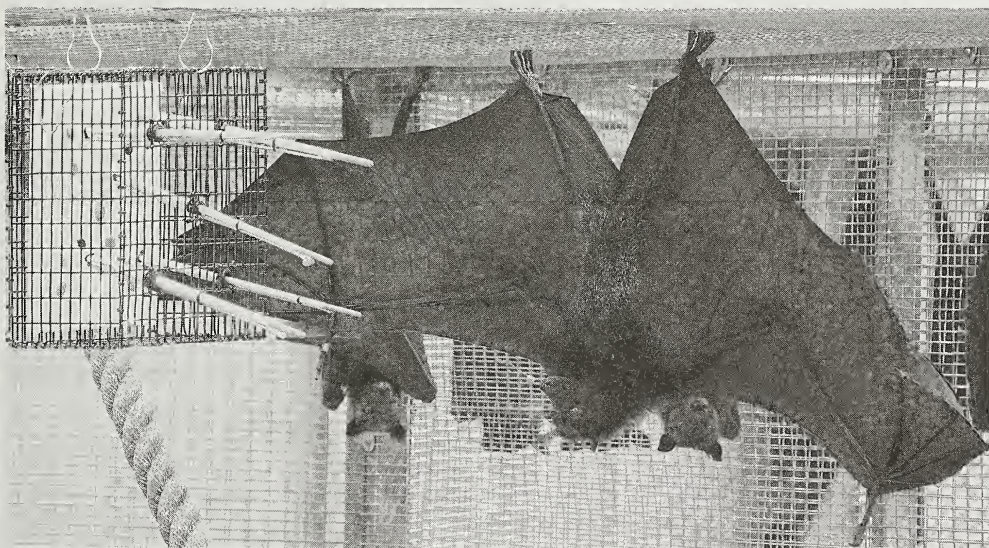


Photo by Michelle Wilhelmy

mouth to maneuver the brush so it can eat the fruit. As it's eating the fruit, the paint brush is moving on the canvas, creating a work of art.

The conjecture of using familiar materials to reduce the introduction process was proven right. The painting enrichment was first tested on a group of Large Flying fox (*Pteropus vampyrus*), consisting of eleven female and one male. Upon noticing the enrichment, all twelve bats displayed, a defensive posture in which the bats fully extend both wings, at the enrichment apparatus. The decision was made to first put the enrichment in without food attached to the skewers to see if the novelty alone would prompt the bats to paint. While a few of the bats did approach and investigate the enrichment, they lost interest after a few minutes. The enrichment was removed and cantaloupe was attached to each skewer and placed back in with the animals. The bats again displayed at the enrichment and after a brief period, some began to approach. This time however, the bats began to manipulate the skewers to eat the cantaloupe, creating the first of many bat paintings. The painting enrichment made its debut at the 7th Annual Florida Bat Festival where people could watch the bats paint and purchase a painting to take home, proof that these amazing animals are, without a doubt, something worth saving.



Another masterpiece in the making, these bats collaborate on a canvas.

Lion Fun Days; Conservation Connects Mozambique to Texas

By:

Angie Pyle, Senior Carnivore Keeper
Houston Zoo, Houston, Texas



The Velasquez Elementary Cats for Conservation

The Houston Zoo's conservation department schedules several guest speakers throughout the year to present lectures to zoo patrons, employees, and volunteers. The money raised by the lectures is then donated to the conservation program the guest speaker represents. After learning that one of the zoo's fall lecture series speakers was Dr. Colleen Begg (researcher and conservationist for African carnivores), I began to research the Niassa Lion Project. NLP has been working since 2003 exclusively in the Niassa Reserve, Mozambique. Researchers have been tracking animals and vaccinating animals, as well as working with the locals on how to safely live with lions. "Lion Fun Days" was one of the project's methods for community outreach and education. The entire NLP team got together and came up with activities, games, and puzzles for the children of Mbamba, Mozambique to participate in. The idea is to teach the children about the importance of Carnivores in their ecosystem through fun and engaging activities. The children painted animal masks, ran relay races, acted out plays, and played a special ecosystem tug of war. At the end of the day, the children bring home solid conservation messages to their parents from these activities and crafts.

We wanted to replicate Lion Fun Days at the Houston Zoo and organize the event to mirror the

one in Mozambique. The Houston Zoo could help create awareness about the plight of African Lions, as well as sell unique items to raise money for the Niassa Lion Project. We thought it would be great to have Lion Fun Days at our zoo in conjunction with Mozambique's to strengthen the message and relationship between our organizations. We could teach the same principles, and let American and Mozambique children know that children around the world are learning about their role in conservation.

After discussing the idea with the Houston Zoo's Conservation department, we set our sights even higher and decided to include the Velasquez Elementary School on the project. Velasquez Elementary is located on the south side of Houston, Texas and raises money annually for feline conservation. Last year the school donated \$1,000 to the Houston Zoo's Conservation Department for Small Cat Conservation, focusing on ocelots. This year the school donated \$1,000 to be given to the Niassa Lion Project. As a reward for the classroom that raised the most money, we invited 18 kids from Velasquez to the zoo on March 22, 2011. The children participated in a condensed version of Lion Fun Days; we tried to duplicate a few of the activities they do in Mozambique. The children colored lion masks, played a special ecosystem game of tug of war, made hand prints next to their take home lion paw prints, all the while learning about African lions. At the end of the activities the children got their class picture taken in front of our lions at the training window. (Our zoo has a graphic which folds down exposing a wire mesh that allows the keepers to interact with the Lions while they are on exhibit.) Houston Zoo employees then traveled to Velasquez Elementary School to give a presentation about African Lions and the Niassa Lion Project as a reward for the entire school's participation in the Cash for Cats fundraiser.

When Dr. Colleen Begg visited the Zoo for her lecture, she took the pictures and film of the Velasquez Elementary children engaging in their Lion Fun Day activities back with her to Mozambique. The children in Mozambique were delighted to see that kids in Houston are participating in the same activities as them. We hope to create a partnership between the Houston Zoo and the villages of Mozambique. Together we can make a difference in the future of lions.

The Houston Zoo organized its first Lion Fun Days on November 3rd & 4th of 2011, and it was a great success. We were able to reach hundreds of children through keeper chats, games, and arts/crafts. We raised over \$1500 for the Niassa Lion Project, but most importantly we had fun with conservation. The children had a great time, and were able to recite the conservation message at the end of the day.

What's next? I would love to see other zoos collaborate with the NLP and organize Lion Fun Days



Children
participating in
Lion Fun Days at
the Houston Zoo.

of their own. I look forward to more schools getting involved in raising money for conservation, and learning how to take responsibility for the environment.

As a keeper, I am proud to be a part of something bigger than caring for the animals within our Zoo. I am proud to know that I am doing something to help make a difference for the lions in the wild. With the support of the Houston Zoo's Conservation Department, the children at Velasquez Elementary and I have become more actively involved in conservation. The Houston Zoo, Houston Zoo Keepers, Velasquez Elementary School, Velasquez Elementary children, Niassa Lion Project, and the children of Mbamba, Mozambique have started what I hope to be a beautiful relationship.



A game of Tug of War at Lion Fun Days



A large crowd enjoys a Keeper Chat in front of the lion exhibit

A Tale of How This Zoo Keeper Attended an AAZK/AZA Class...FOR FREE!!

By

*Lindsay Ireland, Bird Department Zoo Keeper
Detroit Zoological Society
Royal Oak, Michigan*



In the zoo and aquarium world, techniques and protocols are always evolving; changing to better the lives and the welfare of exotic animals in captivity. It is our duty as zoo keepers to keep up with these changes and constantly improve our skills for the good of the individuals in our care. Journals and magazines provide good research papers and ideas. Communications with our fellow keepers at other facilities through e-mail, chat forums and other digital means are helpful for a quick update. In my opinion, the best way to fully understand new material and learn is getting together with others in the field, in such places as conferences or workshops. Another great resource for such in-person learning is through Professional Development courses.

The Association of Zoos and Aquariums (AZA) provides a variety of Professional Development courses for different zoo personnel from zoo keepers to directors. One such course is Advances in Animal Keeping, which is conducted in conjunction with AAZK, Inc. This course was designed to cover the essential aspects of

animal keeping through a variety of topics like animal behavior and husbandry, exhibit design, crisis management, and communication. The goal is “to motivate and retain animal care professionals within our industry and to elevate the standards of animal care in AZA zoos and aquariums” (AZA, 2012). This sounded like a great opportunity for some continuing education and a chance to meet new colleagues. The price tag to attend, however, was a little daunting for a zoo keeper’s budget.

In the course description, it stated that scholarship funding was available...through a competitive process. This sounded challenging and a bit worrisome. Grant writing is not my forte, nor will it ever be, but I decided to do some more investigating. While perusing the “Member’s Only” section of AAZK.org, I discovered that there were several grants available to zoo keepers for a variety of different things. Did you know that as a National Member of AAZK, you are eligible to apply for grants to travel to conferences or workshops, conduct research, or to attend a Professional Training course? One such grant is focused solely on assisting a member with attending the AAZK/AZA Advances in Animal Keeping course. Luckily, I was a card-carrying member of AAZK that was interested in attending this particular class. The grant was for \$1000 to help with tuition, travel, lodging and meals. While this would not cover the entire expense of my trip, it made it much easier

to manage with my income. The knowledge gained by attending this course would be well worth my time and money.

Grant writing can be a little scary or challenging for zoo keepers. Surprisingly, the grant process through AAZK was quite easy. All that was needed was a short application, *Curriculum Vitae*, and three letters of support. The application simply asked for a description of my current duties as a zoo keeper, my AAZK involvement and what my career goals were. I gathered recommendation letters from my Curator and the Chief Life Sciences Officer at the Zoo, plus a third from the Veterinarian from another facility that I had collaborated with in the past. About a month or so later, I received an e-mail regarding my application. I had received the funding, and it was increased to \$2000! This news made me more excited than finding free donuts in the break room!

With this financial aid, I was able to attend the Advances in Animal Keeping course in Toledo, Ohio on April 28 through May 3, 2012. I was a little unsure of what to expect, as this was my first AZA or AAZK course since starting my career. As a typical bird keeper with five years of paid experience under my belt, I am not quite a veteran nor a novice. The material and pace of the class was great. A brand new keeper would have difficulty keeping up and understanding all of the concepts. A seasoned "old timer" with 15+ years might find some of the topics introductory, but they would still benefit from the refresher and application of their skills through the group work and discussions.

Advances in Animal Keeping is intended as a class, so there were PowerPoint presentations of material, quizzes, and a group project, but the instructors did a great job understanding that zoo keepers cannot sit still all day long. Their expertise and personal experiences provided a valuable resource for the students as well as a good way to make the material applicable to our individual situations. For instance, as a penguin keeper, I have never had to capture and restrain any taxa other than birds, but the capture and restraint section of the class influenced me to analyze the protocols and practices that I use with the animals in my care. It also gave me an insight into how my colleagues work with their animals and a better appreciation for their skills.

Without divulging too much of the valuable information provided in the course, I would like to share two of my favorite aspects. First, I appreciated the wide variety of topics. Many sections focused on animal-based skills and techniques regarding training, enrichment, veterinary care, handling, and reproduction to name a few. These are beneficial in shaping an animal keeper, but like it or not, our daily routines often include working with the members of our own species too. This is where the topics such as presentation skills, communication, safety, and regulations come into play. I learned how to better work with the variety of people that I encounter, whether it is a co-worker, guest, or supervisor. The schedule and diversity of the material provided a good overview to make a well-balanced zoo keeper.

Secondly, the mixture of classmates and their backgrounds made for a great learning atmosphere. It was helpful to hear from other zoo keepers about their experiences. The group work and projects simulated real-life situations that are typically encountered in our field. It provided a comfortable forum where we could discuss class topics as well as other questions or concerns regarding our profession. The practicality of these exercises and discussions helped tie together the learned concepts from the class, plus the networking opportunity was very beneficial for the future.

This article was not solely intended to brag about the awesome experience that I had or the fact that I received complete funding to attend this class. It was meant to motivate and encourage you, my fellow zoo keepers, to make the most of your AAZK membership and the opportunities provided for you. Apply for these grants, take these courses, and make these life-long connections with your colleagues across the world. These interactions and experiences with others in our field help make the advances in our profession that ultimately change the lives of captive exotic animals in zoos and aquariums.

I would like to thank AZA, AAZK, the instructors, and the Toledo Zoo for providing the venue and experience that makes this course happen. I thank my classmates for the intriguing discussions and opportunity to hear your wonderful stories and insight. A big thank you to my colleagues that wrote the recommendation letters that assisted me in receiving the grant and to the Detroit Zoo for supporting keeper professional development. Most of all, I would also like to express my deepest gratitude to AAZK, Inc. for providing the grant which made it all possible. We all know that this job is not done for the money; it is done for the love of the animals. It is such a comfort knowing that there is an organization willing to support zoo keepers that want to continue to learn and continue to grow in order to provide the best care for those creatures that depend on them.

Reference

AZA. 2012. Advances in Animal Keeping – course description. www.aza.org/AAK.aspx

AAZK Grant Programs

Professional Development, Conservation, Research, and Professional Training

AAZK Professional Travel Grant is designed to assist AAZK members with costs associated with attending professional meetings/workshops or participating in field research. A total of \$1,000.00 is available annually. **Applications are due by March 1**, preferably prior to the project you are wishing to attend or participate in. Winners are required to submit an article to the *AKF* covering the project that they were awarded the funds for.

Advances In Animal Keeping Course offered by AAZK and AZA through the AZA professional schools program. A total of \$2,000.00 will be awarded to the winning applicant to help cover costs associated with the course. **Applications are due by March 1** of the year prior to the one in which the applicant wishes to attend this course. Winners are required to submit an article to the *AKF* covering the class and what they experienced.

Conservation, Preservation, and Restoration Grant awards up to \$1,000.00 once a year for projects oriented toward all conservation, preservation, or restoration of habitats/species with a preference for projects taking place in the U.S. but not limited to this. **Applications are due March 1** of the calendar year for funding the following year. Winners are required to submit an article to the *AKF* covering the project that they were awarded the funds for.

Research Grant awards up to \$2,000.00 once a year for AAZK member-driven research projects, small or large! **Applications are due March 1** of the calendar year for funding the following year. Winners are required to submit an article to the *AKF* covering the project that they were awarded the funds for.

Information on the AAZK grant program is available on the AAZK web site or by contacting the Grants Committee Chair at: shelly.roach@columbuszoo.org or (614) 724-3667.



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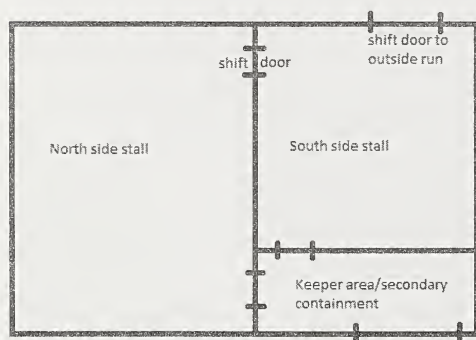
Training Tales Editors – Jay Pratte, Henry Doorly Zoo;
Kim Kezer, Zoo New England; and Beth Stark-Posta, Toledo Zoo

Using Training as a Distraction to Ensure a Low-Stress Knockdown On a Sloth Bear

By Jenna Schmidt
Keeper, Rolling Hills Wildlife Adventure, Salina, Kansas

Jaffna, a sloth bear (*Melursus ursinus*), arrived at Rolling Hills Wildlife Adventure in May of 2003. It was quickly established that she was not happy on exhibit and would be much more comfortable away from the public's eye, so she was moved down to off-exhibit holding (called the Main Barn) in October of the same year.

The Main Barn is a huge horse barn and show arena left over from before the zoo was established, when the founder of the zoo bred Belgian horses. Over many years the barn has slowly been converted into off-exhibit animal holding, among many other things, by retrofitting the spacious horse stalls in different ways. The four stalls that have been converted into spaces that can handle dangerous animals are split in two, each with a north and south side, so the animal can be shifted away from the keeper. The south sides have small keeper areas that also act as secondary containment (Figure 1). All the stalls in the barn have long narrow fenced-in runs so animals can have outside access.



I joined the Rolling Hills Keeper Team in late July 2011. The only training Jaffna had received before my arrival was target training, started in July 2010, to assist with shifting issues that sometimes arose during her false pregnancy behaviors and the sleepy winter months. I was eager to start training Jaffna and by October I was training her almost every day. By the end of October we had covered target, sit, stand and open. Even though I was technically the trainer in these sessions, it became readily apparent to me that Jaffna was a very patient teacher and I learned a lot from

the finicky sloth bear I had only known for four months.

Jaffna was on a surplus list and in October the Sloth Bear SSP approved to move her to Little Rock Zoo in Little Rock, Arkansas. Thoughts were turned to how we could make this transition as stress-free as possible. We devised a plan that had Jaffna walking into the crate Little Rock was sending to

us with no knockdown needed. Time was an important factor in this, so it was disappointing when the crate delivery date was delayed a few times. The crate finally arrived a week or so before the big move. Once the crate arrived, we measured the dimensions of both it and the doors to the stall. It was not going to fit. Even if we did somehow get it into the stall, we would have the problem of hand-carrying a 226 kg (500 lb) crate in and then carrying it back out with an added 118 kg (260 lb) of sloth bear.

After coming to this realization, our efforts shifted from planning to crate train Jaffna to coming up with ideas to minimize stress for her upcoming knockdown and move. I was eager to utilize her new training behaviors to help us, and after a short meeting with our veterinarian Dr. Danelle Okeson and our vet tech Sara McGinnis we had a game plan: I would train Jaffna on the south side of her stall and our tech, Sara, would blow-dart her while she was focused on the session. Sara would be the one darting her as Jaffna still had ill feelings towards Dr. Okeson since the pre-ship knockdown a month earlier. Sara also works as a relief keeper, so it was an added bonus that Jaffna knew her and was comfortable with her being around the stall and working her.

Working in a time crunch once our plan was established, and knowing from previous experience that other people and noises were huge distractions for Jaffna, Sara began standing outside Jaffna's stall as I did training sessions to desensitize her to Sara's presence. Our first desensitization and training session took place just six days before Jaffna was scheduled to depart. I trained Jaffna while Sara stood outside the stall, holding a broom loosely by her side to represent the blow dart gun. Jaffna's entire focus was on Sara for the first 5 minutes of that session and I finally had to bring in the "big guns," peanut butter, to get a response. We stayed with targeting as I slowly moved her the length of the stall away from Sara. I cued for a stand and as Jaffna responded she noticed the broom Sara was holding. She rushed the wall. I attempted to call her back twice as she ran, paced, charged, and huffed at Sara. Sara moved away and I sat calmly for a few minutes before officially ending the session with our "okay, done, thank you." Sara and I wanted to get as many sessions in as possible before move day so we tried again that evening in a more casual setting. Instead of locking her over and training from the north side, I trained from the keeper area with the coveted peanut butter. I received perfect responses with no attention paid to the broom-less Sara.

The next day I was scheduled to come in late so, not wanting to miss an opportunity for desensitizing, Sara stood by with a broom as my partner Zack Marks did the regular cleaning for the day. Jaffna charged the fence once half-heartedly. We were making progress already.

The next two days were our weekend off, so that left us with one day of desensitizing/training before Jaffna's big day. To compound the time crunch, Jaffna was acting slow and disinterested, characteristics common when she was about to go through one of her false pregnancies. This meant we had to go all out in finding a motivating reinforcer. On the day before Jaffna's move, peanut butter barely worked in the morning, but Sara was able to raise the broom ("dart gun") three times for a "shot" as I trained our sloth bear. Knowing peanut butter wasn't going to be enough of a motivator for long, I consulted Jaffna's previous keepers and found that blueberry muffin mix was historically a very special treat for her. We needed something that we would only have to give a little of for a reward since ideally she would have an empty stomach for her knockdown. We procured some muffin mix by that evening for our last dry run before the next morning's move. Jaffna was incredibly slow to get up and going for our session, again showing signs of her false pregnancy sequence of behaviors. Once she realized I had muffin mix, a treat not had for years, she was willing to train. She targeted great with solid hits. Sara got four practice shots lined up with the actual blow dart gun. We were as ready as we could be for the next morning.

The next morning, as soon as the Little Rock Zoo van pulled in, we shut down the barn for all personnel except Sara and I to eliminate distractions. As planned, I targeted Jaffna down the stall wall, me down the south side and her on the north (Figure 2).

I started with offering peanut butter but she refused to accept it and looked pointedly at the muffin



Figure 2: Jaffna Targeting

mix. She targeted solidly five times with small amounts of her desired reinforcer. I moved her a little closer to Sara and got one last target in before Sara landed a perfect shot with the dart gun, first try. Jaffna started, turned twice, and ran a little ways (not towards Sara, as Sara had neatly stepped out of sight the minute the dart hit). She did not charge or huff. I calmly sat on the right side of the stall for a few minutes before slowing walking out and cueing an end of session. In retrospect I should have stayed and tried to finish up the session calmly since she was only startled and not panicked. I came back to the stall a few minutes later and hand-fed her a little spoonful of muffin mix for a job well done. She took it calmly and went back to (sleepily) pacing. We considered it to be a complete success; the most non-stressful darting Jaffna had ever been a part of. After the crate was loaded, we waited until Jaffna was in the beginning stages of her reversal before Little Rock started the trip back. Perhaps because of the low-stress easy knockdown we were able to execute earlier, Jaffna enjoyed a quicker recovery than the pre-ship exam reversal. She was blinking and making small movements about 20 minutes after the reversal drug was administered. It took under an hour from the time the dart hit Jaffna to the time Little Rock Zoo's van pulled out of our facility to begin the trip home.

While Jaffna and I had worked on sit, stand and open, it was the simplest behavior – target – that proved the key in this knockdown. While the method we used might not be the most common, we found it worked great for our facility and needs. Thinking outside of the box and using training to help us accomplish the knockdown were a huge part of our successful low-stress move for the finicky sloth bear. It also may have set the stage for an over-all good transition, as we've gotten a few e-mails and picture updates saying that Jaffna is doing great at Little Rock Zoo (Figure 3). She's even started training with her new keepers!

Acknowledgements

Thank you to all the Rolling Hills hard-working staff, especially: DVM Danelle Okeson for allowing and encouraging me to try this unorthodox technique; Sara McGinnis for being the best vet tech a sloth bear could ask for; Brenda Gunder for helping with research on Jaffna's history; and my fellow keepers Deb Zerbe, Erica Tyner and Susan Russel for taking no prisoners with editing. I would also



Figure 3: Jaffna

like to thank Dan Dembiec, currently of the Jacksonville Zoo & Gardens, for first sparking an interest in me to publish a paper: next stop, a study! Last but not least, thanks to the sloth bear that took a little piece of my heart with her on her journey to Little Rock. Be good, Bear!

BHC Editorial Comments by Jay Pratte:

It is always gratifying to read about other keepers addressing the same issues we find ourselves facing and seeing them overcome these problems. In this case we have an animal that has its own ideas about where it wants to spend its time AND we find the author confronted with needing to complete a task within a short, specific amount of time. Tales like this remind us of how people are very creative in meeting the animal's and institution's needs in a crunch. There will always be a solution; sometimes we just really need to be proactive in figuring out what it is for a given situation.

Having trained a mandrill to do exactly what Jaffna was taught to do, namely face one person while another darts or injects in from behind or the side, there are a number of trust issues to overcome. The author clearly accounted for these, and ensured sessions and staff associations were positive. Often we find ourselves needing to "lure" an animal into a specific position or location to accomplish a short term goal, but this is a very good foundation to build into a behavior that involves cuing and rewarding. The author was also very adept with communication, not hesitating to contact previous caregivers to determine if there were previously-unknown favored rewards. Finding this preferred reinforcer allowed the author to jackpot a behavior that might not otherwise have been offered under pressured circumstances.

Lastly, the "retrospect" observations are fabulous. The author clearly thinks about what has occurred, and how to build on what was learned for the future. This is how we improve as trainers and learn from others as well as our animals. Great job!

Animal Keepers' Forum 2012 Index

Volume 39, Numbers 1-12

AARDVARKS & OTHER BIOTA

A

Anteater	
Giant	378-381

B

Baboon	
Guinea	525-529
Hamadryas	513-518
Barbet	
Toucan	346
Bats	144, 216-231
Bear	532
Polar	356-358
Bobcat	247-248
Bonobo	260-265

C

Camel	
Bactrian	470-472
Cat	
Oncilla	37-38
Cheetah	2, 194-198
Chimpanzee	142-143, 404-412
Chinchilla	232-238
Condor	
Andean	18-23
Crane	
East African Crowned	568-572

D

Drill	50
-------------	----

E

Elephant	
African	12-16, 191-192, 243-245

F

Fish	
Gold	137-138
Flying Fox	216-231
Indonesian	202
Spectacled	202
Variable	202
Fox	
Channel Island	460-464
Fennec	136-137
Frog	
Bull	81-89

G	
Gorilla	38-39
Western Lowland	70-76
H	
I	
J	
K	
Kangaroo	
Tree	212
Kinkajou.....	509-512
L	
Lemur	
Jolly's Mouse	80
Mongoose.....	428-432
Red-fronted	81-89
Ring-tailed.....	81-89, 490, 520-524
Leopard	246
Snow	250, 266-267
M	
Macaque	
Lion-tailed.....	513-518
Mangabey	
Golden-Bellied	504-508
Meerkat	442
Monitor	
Black Tree	33-36
Monkey	
Spider	382-385
N	
O	
Okapi.....	433-436
Orangutan	
Bornean	394
P	
Panda	
Giant.....	135-136, 538
Red	98, 114-118
Pangolin	549-550
Penguins	
Emperor.....	24-25
Porcupine	
North American.....	460-464
Prehensile-tailed.....	30-32
Q	

R	
Rhea	556-558
Rhinoceros ... 157-159, 164-165, 166-168, 170-172, 173-176, 180-182, 183-190, 191-192, 243-245	
Black	553-555
Sumatran	150, 177-179, 359-360
S	
Shark	89
Snake	144-145
Northern Brown	81-89
T	
Terrapin	
Painted	338-344
Tiger	39, 90-94, 245-246
Toad	81-89
Tortoise	323-328
African Spur Thighed	307-313
Burmese Mountain	294
Madagascar Flat-tailed	315-317
Pinta Island	314
Turtle	81-89, 303-306, 318-322, 371, 465-469
Eastern Box	329-333
Indochinese Box	334-337
Western Pond	364-371
U	
V	
W	
Waterfowl	372-377
Wolf	146
X	
Y	
Z	

AMERICAN ASSOCIATION of ZOO KEEPERS **ANIMAL KEEPERS' FORUM**

2011 AKF Index	40-48
2012 AAZK Award Recipients	452-455
2012 AKF Awards	456-458
A Message from the International Rhino Foundation	28
A Letter to the AAZK Membership from Anna Merz	166-168
AAZK & PBI Announce Final Totals & Winner of the Trees for Your and Me Chapter Challenge	207
AAZK Announces New Members	9, 66, 110, 162, 213, 256, 298, 351, 396, 448, 496, 544
AAZK Announces New Representative to the ICZ	211
AAZK Appoints New Staff Member	4

About the Cover

Bornean Orangutan	394
Burmese Mountain Tortoise	294
Cheetah	2
Drill	50
Flying Fox	202
Giant Panda	538
Meerkat	442
Red Panda	98
Ring-tailed Lemur	490
Snow Leopard	250
Sumatran Rhinoceros	150
Toucan Barbet	346

AKF Associate Editor Receives Promotion	4
Amanda Ista Appointed as AAZK's Liaison to the AZA Animal Welfare Committee	103
An Interview with Tiffany Palumbo, Greater Orlando Chapter of AAZK	156
An update from one of our Conservation Partners, the Snow Leopard Trust.....	266-267
Anna Merz A Champion for Conservation	169
Ape Action Africa Keeper Germaine Named Disney Conservation Hero for 2011	5

Articles

A Brief Overview of Captive Husbandry of Turtles for Non-Reptile Keepers.....	303-306
A Funny Thing Happened on the Way to the Zoo.....	556-558
A Perfect Day For Tree Planting.....	106-107
An Inside Look at IRF's Indonesian Rhino Protection Units	173-176
An Interview with Marissa Krouse	131-134
Biggest Loser – Ape Style.....	70-76
Bowling For Rhinos – Helping in the Fight Against Poachers.....	157-159
Bubba: A Sulcata on a Skateboard.....	307-313
Conservation and Research for the Western Pond Turtle, (<i>Clemmys marmorata</i>), in Northern	
California	364-371
(The) <i>Cuora galbinifrons</i> Studbook: A Model for Understanding Studbook Challenges .	334-337
Design and Construction of Scale Holder and Weighing Platform for	
Hard-to-Weigh Spider Monkeys.....	382-385
Determining Pregnancy in the Giant Anteater (<i>Myrmecophaga tridactyla</i>): A Case Study at the	
Smithsonian's National Zoological Park	378-381
Diabetes Management in a Troop of Ring-tailed Lemurs.....	520-524
Diabetes Mellitus in Zoos	500-508
Dietary Practices for Hand-Rearing of an Infant Chimpanzee	
(<i>Pan troglodytes</i>) at the North Carolina Zoological Park	404-412
Disney's Animal Kingdom's® Turtle Cognition Program.....	329-333
Educating Without Intimidating.....	199-200
Elephant and Rhino Poaching in Kenya	191-192
Environmental Enrichment for Long-term Captive Bats.....	216-231
(The) Evolution of Wrangling Turtles in Houston, Texas.....	318-322
For Faunal Friends No Longer With Us: Creating an Animal Remembrance Garden	480-485
“Good Catch” Monitoring fish consumption/waste in order to reduce food fish waste at the	
Penguin and Puffin Coast	413-419
Hatching Success of the Madagascar Flat-tailed Tortoise (<i>Pyxis planicauda</i>) at the Fort Worth	
Zoo.....	315-317
Hope for Rhinos in a World of Trouble	180-182
Inca the Kinkajou – Successful Management of a Diabetic Kinkajou (<i>Potos flavus</i>)	509-512
International Rhino Foundation Celebrates Critical Milestone for Sumatran Rhinos.....	359-360

Introducing 1.1 Andean Condors (<i>Vultur gryphus</i>) at the Knoxville Zoo	18-23
Management of a Diabetic Golden-Bellied Mangabey	504-508
(The) Myth of Domestic Monkeys: Common Law and Nonhuman Primates.....	119-130
Necessity is the Mother of Invention: Introducing a Channel Island Fox (<i>Urocyon littoralis clementae</i>) and a North American Porcupine (<i>Erithizon dorsatum</i>) for a Mixed-Species Exhibit	460-464
Observations on Eco-tourism and Conservation in India	268-276
Pangolin Poachers Arrested	549-550
Part I – A Special Partnership	77-80
Perspectives on Poaching: A Park Guard Story	260-265
Planning and Implementing a Herp Survey	420-421
Prehensile-tailed Porcupine Anesthesia Crate	30-32
Preventing Injuries Involving Electrical Cords Near Animal Pens	559-562
(The) Rarest Rhinoceroses in Captivity.....	177-179
Remembering Andy Henderson	486-488
Remembering John Stephan Romo.....	573-576
Rhino Values	183-190
Successful Treatment of Nail Cracks for a Black Rhinoceros (<i>Diceros bicornis</i>).....	553-555
Surgery and Rehabilitation on a Male Painted Terrapin (<i>Batagur borneoensis</i>)	338-344
Techniques for Wild Chinchilla Habitat and Behavior Studies	232-238
Threats to Cheetah Survival in Kenya	194-198
(The) Turtles of the Education Program: Strong Ambassadors for the Ecomuseum Zoo ..	465-469
Use of voluntary restraint for glucose testing and insulin therapy of a female Guinea baboon (<i>Papio papio</i>) diagnosed with diabetes mellitus	525-529
What's Black and White and Red All Over?.....	114-118
What's driving this massive upsurge in rhino poaching and what is the future for rhino in the wild?.....	170-172
Ask The Vet	
HEY DOC! What exactly is “lumpy jaw” and what can I do about it as a keeper?	476-479
Attention All Photographers – AKF Needs Your Photos	10, 67, 113, 165, 400, 567
Bontebok SSP Seeks Coordinator and Studbook Keeper	57
Book Reviews	
<i>Animal Investigators: How the World's First Wildlife Forensics Lab is Solving Crimes and Saving Endangered Species</i>	26-28
<i>Bats in Captivity</i>	231
Calendars for Sale – International Rhino Keeper Association.....	497, 545
Call For Nominations – AAZK Board of Directors.....	503, 551
Call For Papers – For Dedicated Issue of AKF - Chelonians	11, 68, 112
Call For Papers - For Dedicated Issue of AKF – Diabetic Animals.....	11, 68, 112
Call For Papers – For Dedicated Issue of AKF – Gorillas.....	450, 498, 546
Call For Papers – For Dedicated Issue of AKF – Multi-species Bird/Ungulate Habitats	402, 450, 498, 546
Calling All Members – The AAZK Membership Drive	100
Chapters	
AAZK, Inc. Welcomes Two New Chapters to the Association.....	105
Assiniboine Park Zoo's AAZK Chapter's Great Canadian Shoreline Cleanup	552
Becoming the GREATER Philadelphia Chapter of AAZK	104
Congratulations to the Battle Creek Chapter	55
Kansas City Chapter of AAZK	211
Reminder to All AAZK Chapters on Re-Charter Process for 2012	552
Reminder to all Chapters on Recharter process for 2012	3

San Diego Chapter of AAZK	210
Special Thanks to Cape May County AAZK Chapter	204
Special Thanks to Lion Country Safari Chapter	253
Thank You – Audubon Chapter.....	496
Thank You – Galveston Chapter	449
Thank You – Indianapolis Chapter.....	350
Thank You – Omaha Chapter.....	440
Thank You – Phoenix Chapter	541
Chelonians.....	295, 322
Committees	
<i>Awards</i>	
AAZK Awards Committee Now Accepting Nominations	10, 67, 113, 165
<i>Behavioral Husbandry Committee</i>	
Behavioral Husbandry Committee Seeks New Members.....	401, 497, 545
Do Not Miss the Chance to Win a FREE 2012 Conference Registration.....	25
We want to hear your training stories – the good, the bad and the fabulous!	24
<i>Bowling for Rhinos</i>	
(The) 2012 BFR Results	548
Blue Rhino & Bowling for Rhinos	193
Bowling for Rhinos Added to Mother Earth Fund Raising Site	36
Bowling For Rhinos Conservation Resource Fund Grant	101, 154
Congratulations to the 2012 Recipient of the Bowling for Rhinos Conservation Resource Fund..	354
Heather Strawn Wins BFR’s 2012 Honorary Trip to Lewa	449
New Tools for your BFR Toolbox!	152
(The) Rhino and I Know	200
<i>Conservation</i>	
AAZK Announces New Co-Chair of Conservation Committee	209
Conservation Committee Announces New Conservation Station Column Co-Coordina-tors	209
<i>Membership Resources</i>	
Updates from the Membership Resources Committee (MRC).....	400
<i>Professional Development</i>	
Professional Development Committee: What are they up to now?	361-362
Coming Events	
1st Annual Tree Kangaroo Awareness Day.....	212
2nd Venomous Animal Safety and Husbandry Training Seminar.....	208, 258, 302
4th International Congress on Zookeeping	8, 62, 63, 108, 109, 160, 214, 258, 302, 352
8th Biannual Rhino Keepers’ Workshop.....	494, 542
10th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles	8, 63, 108, 160, 214, 258, 302
11th Annual Symposium on the Conservation and Biology of Tortoises and Freshwater Turtles	542
20th Annual Conference of the International Association of Avian Trainers and Educators.....	8
21st Annual Conference of the International Association of Avian Trainers and Educators	446, 494, 542
32nd Association of Zoo Veterinary Technicians Annual Conference.....	352
35th International Herpetological Symposium	208, 258, 302

2012 AAZK National Conference	8, 63, 64-65, 108, 160-161, 214, 258, 302, 352, 398
2012 Orangutan SSP Husbandry Workshop	302
2013 AAZK National Conference	446, 494, 542
2014 AAZK National Conference Dates	68
ABMA Annual Conference	8, 63, 108, 160, 494, 542
Advances in Animal Keeping Course	6, 105
Association of Professional Wildlife Educators	63
AZH Zoo Horticulturist Certification Program	398
Chimpanzee Meeting and Husbandry Workshop	446, 494, 542
Elephant Managers Association Conference	352, 398, 446
Felid TAG Mid-year Meeting and Husbandry Course	206
Florida Animal Care Professionals Development Workshop	302
From Good Care to Great Welfare: A Workshop	
Designed for Animal Care Professionals	10, 63, 108, 160, 214, 258, 302, 352, 398
ICEE – International Conference on Environmental Enrichment	494, 542
International Association of Giraffe Care Professionals	8
International Gibbon Husbandry Conference	214
International Gorilla Workshop	214
International Polar Bear Day is 27 February 2012	3
International Red Panda Day	401
National Zoo Keeper Week Dates - 2012	8, 63, 160, 214, 258, 290
New World Primate Husbandry Workshop	352, 398, 446
Ohio Valley United Malacologists Meeting	398
Otter Keeper Workshop	8, 108
Shape of Enrichment Regional Workshop	8, 63, 108, 160
Training and Enrichment Workshop for Zoo and Aquarium Animals	352, 398, 446, 494
Ungulate TAG Meeting	57
Upcoming AAZK National Conferences	8, 63, 108, 160, 214, 258, 302, 353, 399, 447, 495, 543
Upcoming AZA National Conferences	8, 63, 108, 160, 214, 258, 302, 353, 399, 447, 495, 543
WAZA Annual Conference	494, 542
What Day is it?	9
(The) World Congress of Herpetology	8, 63, 108, 160, 214, 258, 302
World Crocodile Conference	494, 542
World Turtle Day	333
Zoos and Aquariums Committing to Conservation (ZACC)	446, 494, 542

Conservation/Legislative Update

Action on Climate Change	145-146
Africa: Elephants and Rhinos	243-245
Asia: Tiger	245-246
Bad “Medicine”	291
Endangered Species Act Related Lawsuits and Intents	143-144
Florida HB 1117 Vetoes As Unnecessary	291
Institute of Medicine Releases Report on Chimpanzees in Research	142-143
Leopard	246
Much Needed Funding for Bats	144
Snakes Banned from Interstate Transport and Importation	144-145
Turtles in Trouble	371
Whale Alert	292
White-nose Syndrome and the Wildlife Disease Emergency Act	292
Wildlife Friends Foundation Thailand	246
Wolf in California for the First Time Since 1924	146

Conservation Station

A Conversation for the Conservationist	95-96
--	-------

Are Waribashi worth it? The Threat of Disposable Wooden Chopsticks	386-388
Express Crisis Relief.....	433-436
Madagascar Conservation.....	533-536
Palm Oil: an Overview and Message of Hope.....	239-242
Rain Gardens: Bringing Conservation Home	280-281
Contributing Member Remembered by AAZK	6
Enrichment Options	
Coming Out of Their Shells: Enrichment For Tortoises	323-328
Feeling Stuck in a Rut? Ideas on How to Enrich Your Enrichment.....	277-279
Highlight on Pumpkins!.....	473-475
Part II – Lemur Island Enrichment	81-89
Reaching out for enrichment in Arboreal Monitor Lizards	33-36
Safer Enrichment – It’s Easy as 1, 2, 3	422-427
Final Call for Papers – 2012 National AAZK Conference	161
From the Editor	442
Toronto Zoo’s Elephant Keepers Show Extraordinary Efforts in Supporting Their Herd.....	12-16
From the President	
..... 51-53, 99, 151, 203-204, 251-252, 296, 347-350, 395, 443-444, 491-492, 539-540	
General Announcements	67, 113, 164-165, 212
Grants for Leadership Development and Advances in Aviculture AAZK Travel Grant.....	102-103
How Penguins Time Their Dive.....	24-25
In Remembrance – Dianna Frisch.....	147-148
Letters to the Editor	58-61, 153, 205
Lonesome George: Conservation Icon.....	314
Member Updates.....	55-56
My AAZK	
AAZK Conferences, Fostering the Wonder Within	565-567
International Turtle Conservation	563-564
Neptune’s Newsreel	419
New Species of Lemur Discovered in Madagascar	80
Publications	
Keeper Profiles.....	17, 257
Research in Practice	
Asking Zoo Visitors to Change	289-290
Bobcat Breeding and Enrichment	247-248
Catnip and Cinnamon in Small Felids	37-38
(The) Effects of Substrate on Foraging Behavior in Aquarium Fish	137-138
Enriching Zoo Bears	532
Exhibit Space and Female Tigers.....	39
Identifying the Poop.....	530-532
Moderating Undesirable Behavior in Petting Zoo Animals.....	287-288
Neotropical Primates in Mixed-species Exhibits	438-440
Optimizing Environmental Enrichment for Fennec Fox	136-137
Spending Time Evaluating Enrichment – How Much is Enough.....	437-438
Transportation of Giant Pandas.....	135-136
Using Video and Environmental Enrichment	38-39

(The) Science Behind Coral Bleaching.....	32
Second Call for Papers – 2012 AAZK National Conference.....	29, 65
Snow Leopard Trust.....	354
Special Thanks to International Rhino Keeper Association.....	152
Thank You to Commercial Members	69
The Scoop	54-55, 100, 154-155, 206-209, 354, 400-401
Training Tales	
A Tale of Three Camels.....	470-472
Advances in Waterfowl Training and Enrichment at Disney’s Animal Kingdom®	372-377
Behavioral Management of a 1.0 East African Crowned Crane (<i>Balearica regulorum</i>) Through Laser Pointer Training	568-572
Catch a Tiger By the Tail: The Next Phase of Tiger Training at Disney’s Animal Kingdom®	90-94
Ideas to Help New Training Programs (Part I)	139-141
Ideas to Help New Training Programs (Part II)	282-286
Using Training to Help Treat Diabetes in Non-human Primates: The Importance of a Flexible Shaping Plan and Good Communication for Training Success	513-518
You Want to Stick What? Where?: Redirecting Focus to Facilitate Injection Training of Mongoose Lemurs.....	428-432
Turtle Survival Alliance	300
Websites/Listservs/Web Resources/Blogs	
International Rhino Foundation Launches New Website.....	152
Rhino Resource Center Website.....	176
University of Stirling Announces New Marmoset Website	208
Zoo Macropod Interest Group now on Facebook®!.....	100
World’s First Hybrid Sharks found Off Coast of Australia.....	89
World’s Top Animal Conservation Award Goes to PBI Scientist	356-358

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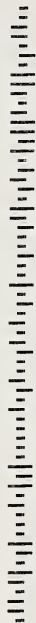
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